
GTC

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2825 W Mercer Way Traffic Impact Analysis

Jurisdiction: City of Mercer Island

August 2021



GTC #19-199

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1. INTRODUCTION

Gibson Traffic Consultants, Inc. (GTC) has been retained to complete an updated traffic impact analysis (TIA) for the proposed 2825 W Mercer Way development per scoping and count information provided from the City of Mercer Island. The development is in the southwest corner of W Mercer Way at SE 28th Street. The proposed development will consist of 14 single-family residential units and the site is currently vacant of a building but was the site of a Boys & Girls Club with over 20,000 SF of building space. A site vicinity map is included in Figure 1.

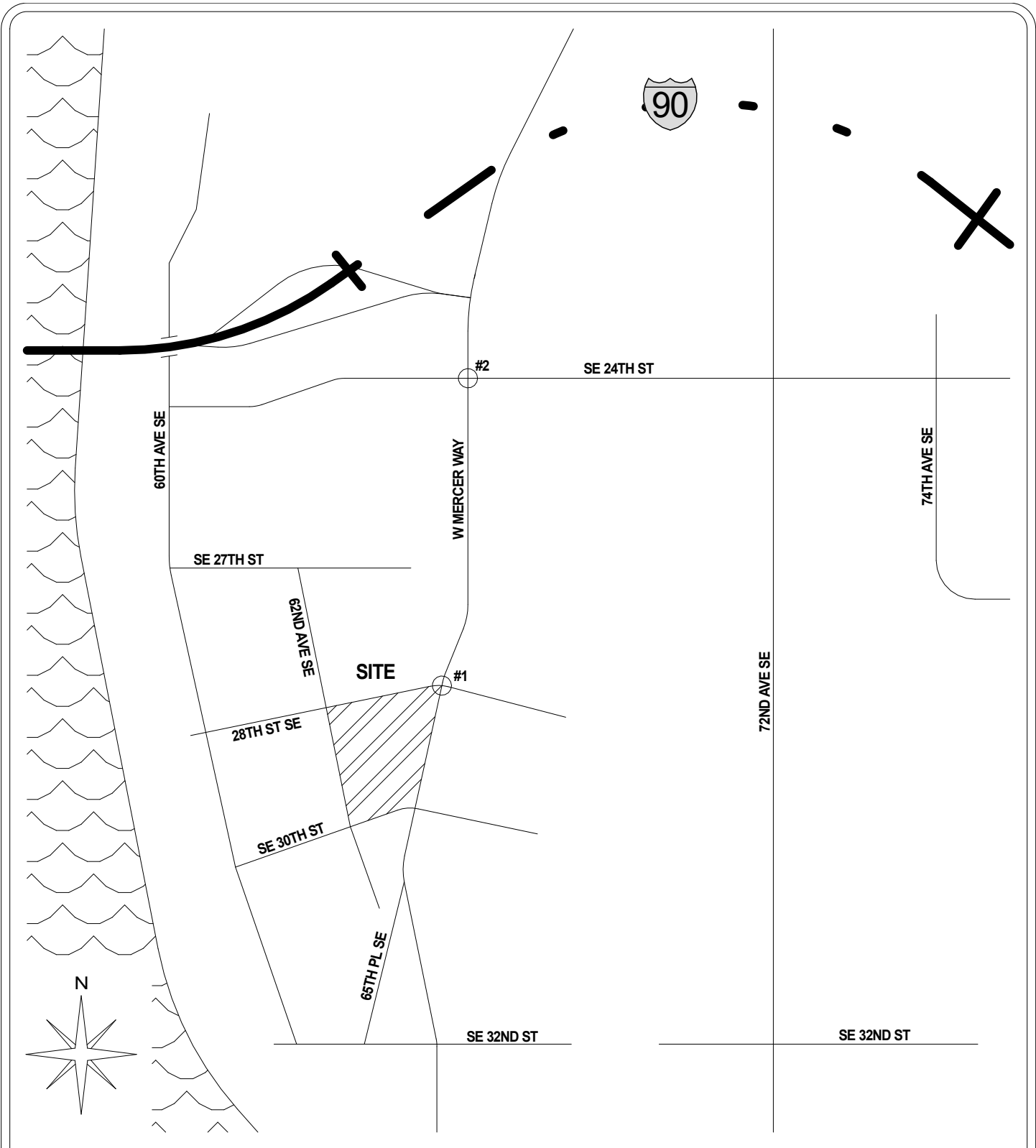
This report summarizes GTC's traffic analysis and findings that include:

- 1) Proposed site development and access
- 2) Trip generation, trip distribution, and trip assignment of the development trips
- 3) Existing and future without development volumes and LOS
- 4) Future with development volumes and LOS
- 5) Mitigation identification

Matthew Palmer, responsible for the traffic analysis and report, is a licensed professional engineer (Civil) in the State of Washington and a current member of the Washington State section of ITE.

2. PROPOSED SITE DEVELOPMENT & ACCESS

The proposed 2825 W Mercer Way development will include 14 single-family residential units and no credit for the previous uses was allowed. Six of the units will have access to 62nd Avenue SE, seven units to SE 28th Street and one unit will have access to SE 30th Street. Future analysis was done for the year 2024 as the year that the site is anticipated to be developed and fully occupied.



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GTC #19-199**

**2825 W MERCER WAY
14 NEW SINGLE-FAMILY
DETACHED UNITS**

FIGURE 1

SITE VICINITY MAP

MERCER ISLAND

LEGEND



PROJECT SITE




STUDY INTERSECTION

3. METHODOLOGY & ANALYSIS SCOPING

A peak-hour level of service (LOS) determination at the site access is determined using the methodology described in the *Highway Capacity Manual (HCM) 6th Edition* and *Synchro 11* software developed by Trafficware. Site traffic generation estimates for the new use is based on data in the Institute of Transportation Engineers (ITE) *Trip Generation, 10th Edition + Supplement* (2020). Average trip generation rates were utilized to estimate the weekday daily, AM and PM peak-hour trips.

Traffic congestion on roadways is generally measured in terms of LOS at critical intersections. In accordance with the *Highway Capacity Manual 6th Edition*, roadway facilities and intersections are rated between LOS A and F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. The LOS at signalized intersections and all-way stop-controlled intersections are based on the average stopped delay for all entering vehicles. The LOS at two-way stop-controlled intersections is based on stopped delay times for the critical approach or movement(s). Geometric characteristics and conflicting traffic movements are taken into consideration when determining LOS values. City of Mercer Island has an acceptable intersection level of service threshold of LOS C within and adjacent to the Town Center and LOS D or better elsewhere for City concurrency intersections of two arterial streets. The intersection of SE 53rd Place at Island Crest Way is exempt from the LOS D standard. A summary of the level of service criteria has been included in Table 1.



Existing turning movement counts the intersection of W Mercer Way at SE 24th Street were provided by the City of Mercer Island and are from March 2018. For the intersection of W Mercer Way at SE 28th Street counts were conducted by the independent count firm, Traffic Data Gathering (TDG), on Wednesday April 14th and Thursday April 15th, 2021. The data was normalized by increasing the volumes by 25% during the AM/PM peak-hours and balancing the northbound/southbound volumes between SE 28th Street and SE 24th Street. Traffic volumes at SE 28th Street are impacted by the COVID-19 pandemic, the traffic volumes have been increased by a 25% during the AM and PM peak-hours. This was determined based on information provided by WSDOT along I-90 at the I-90 floating bridge for the daily difference in trips. Movements that resulted in higher volumes after being normalized were kept higher to represent a conservative “worst case” analysis of the intersection operations.

Table 1: Level of Service Criteria for Intersections

Level of ¹ Service	Expected Delay	Intersection Control Delay (Seconds per Vehicle)	
		Unsignalized Intersections	Signalized Intersections
A	Little/No Delay	≤10	≤10
B	Short Delays	>10 and ≤15	>10 and ≤20
C	Average Delays	>15 and ≤25	>20 and ≤35
D	Long Delays	>25 and ≤35	>35 and ≤55
E	Very Long Delays	>35 and ≤50	>55 and ≤80
F	Extreme Delays ²	>50	>80

GTC used a 0.5-percent annual compounded growth rate to account for background traffic growth in the site vicinity, this is consistent with the Traffic Impact Analysis Guidelines. Per discussions with the City of Mercer Island staff no additional pipeline developments were added. Two off-site intersections were identified for existing, baseline, and future with development level of service disclosure. The study intersections are:

1. W Mercer Way at SE 28th Street – Two-way Stop Controlled
2. W Mercer Way at SE 24th Street – All-way Stop Controlled

¹ **Source:** *Highway Capacity Manual 6th Edition.*

LOS A: Free-flow traffic conditions, with minimal delay to stopped vehicles (no vehicle is delayed longer than one cycle at signalized intersection).

LOS B: Generally stable traffic flow conditions.

LOS C: Occasional back-ups may develop, but delay to vehicles is short term and still tolerable.

LOS D: During short periods of the peak hour, delays to approaching vehicles may be substantial but are tolerable during times of less demand (i.e. vehicles delayed one cycle or less at signal).

LOS E: Intersections operate at or near capacity, with long queues developing on all approaches and long delays.

LOS F: Jammed conditions on all approaches with excessively long delays and vehicles unable to move at times.

² When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection.

4. EXISTING CONDITIONS

4.1 Road Network

W Mercer Way is a 2-lane secondary arterial with a posted speed limit of 30 mph. The roadway has no curb, gutter, and sidewalks along both sides of the road. In the site vicinity there is a paved path on the east side of the roadway.

SE 24th Street is a 2-lane collector arterial with a posted speed limit of 25 mph. The roadway has curb, gutter, or sidewalks on both sides of the roadway east of W Mercer Way and along the south side west of W Mercer Way.

4.2 Existing Volumes and Level of Service

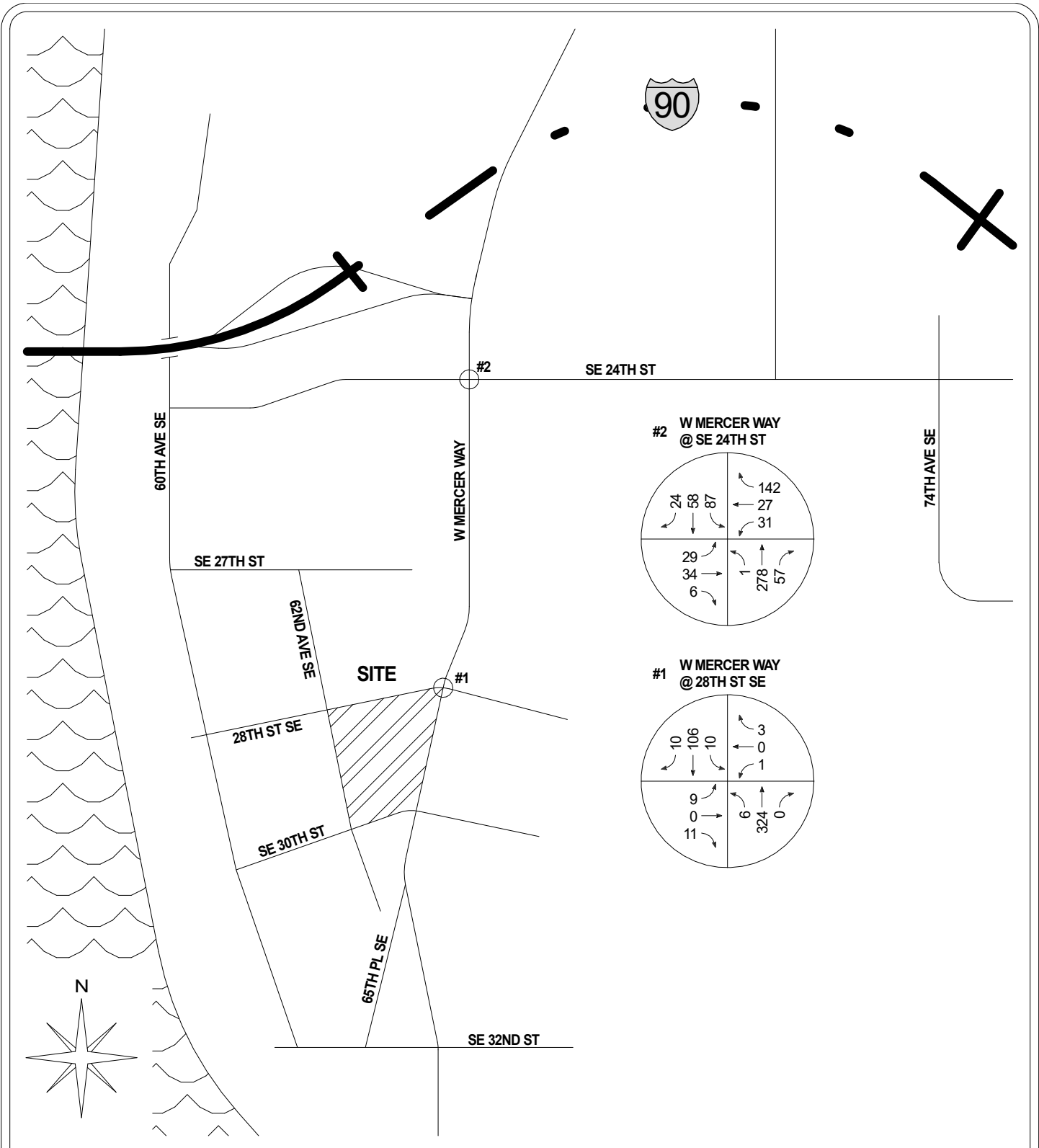
The normalized existing AM and PM peak-hour turning movement volumes at the study intersections are shown in Figure 2 and Figure 3, respectively. Based on the existing counts, channelization and intersection control the study intersections **operate at acceptable LOS B in both peak-hours**. The existing level of service is summarized in Table 2.

Table 2: Existing Level of Service Summary

Intersection	Time Period	Normalized Existing Conditions	
		LOS	Delay
1. W Mercer Way at SE 28 th Street	AM	B	10.9 sec
	PM	B	12.1 sec
2. W Mercer Wat at SE 24 th Street	AM	B	10.7 sec
	PM	B	11.0 sec

4.3 Collision Analysis

Collision data provided by the WSDOT for January 1, 2016 through December 31, 2020 shows one parked car collision at SE 28th Street and seven collisions at SE 24th Street. Those collisions include three rear-end, two were at angle, and three ped/cyclist collisions. One of the rear-end collisions resulted in a fatality, the driver was under the influence of alcohol.



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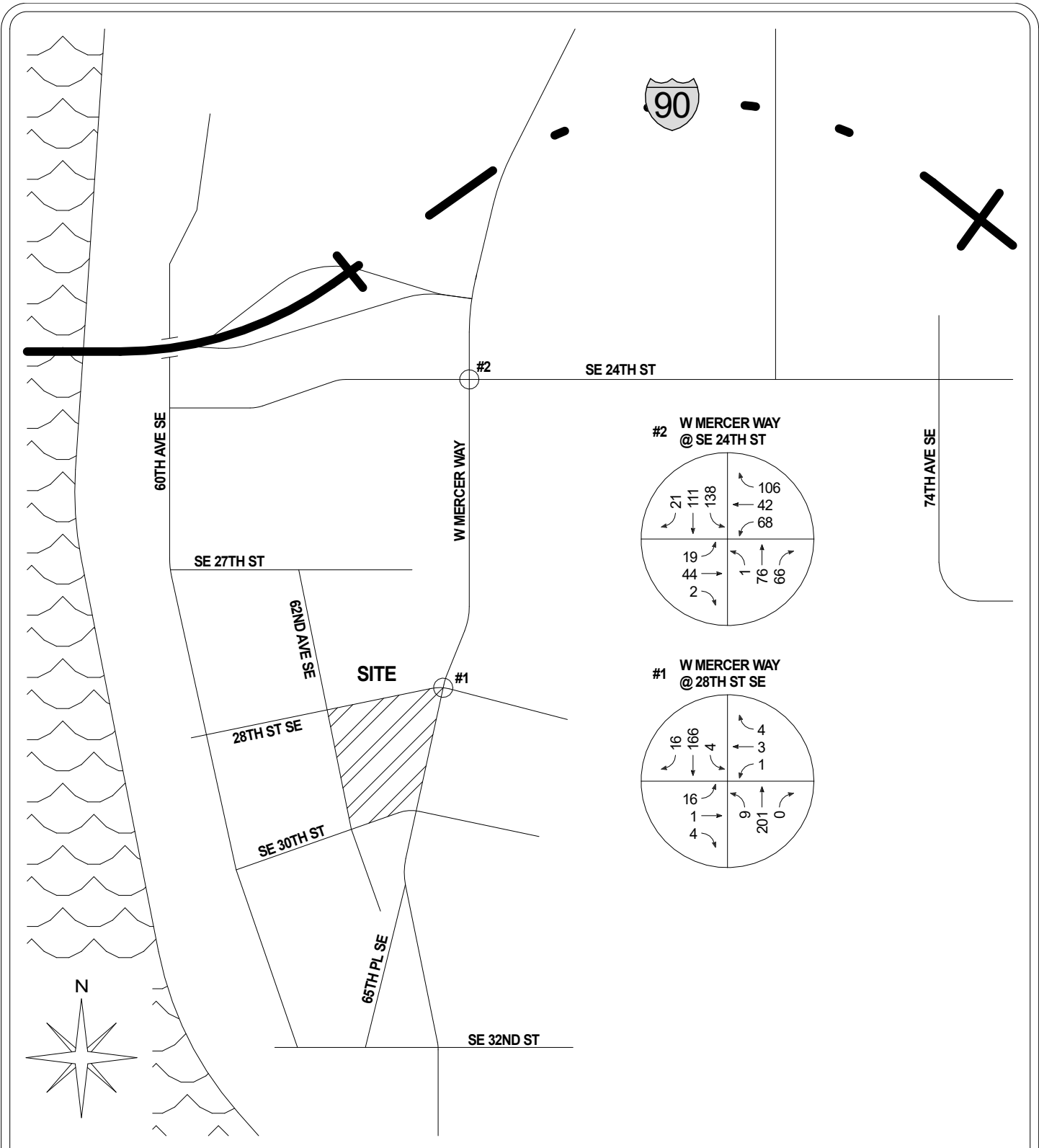
**2825 W MERCER WAY
14 NEW SINGLE-FAMILY
DETACHED UNITS**

LEGEND

xxx → AM PEAK HOUR
TURNING MOVEMENT VOLUMES

**FIGURE 2
EXISTING
TURNING MOVEMENTS
AM PEAK-HOUR**

MERCER ISLAND



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2825 W MERCER WAY
14 NEW SINGLE-FAMILY
DETACHED UNITS

LEGEND

XXX → PM PEAK HOUR
TURNING MOVEMENT VOLUMES

FIGURE 3
EXISTING
TURNING MOVEMENTS
PM PEAK-HOUR

MERCER ISLAND

5. FUTURE CONDITIONS

5.1 Trip Generation

Trip generation calculations for the proposed development are based on national research data for land uses contained in the Institute of Transportation Engineers' (ITE) *Trip Generation, 10th Edition + Supplement* (2020). The trip generation calculations for the development are based on the average trip generation rates for ITE Land Use Code 210, Single-Family Detached. The 2825 W Mercer Way development is proposing to construct 14 single-family detached units. The trip generation for the development is summarized in Table 3.

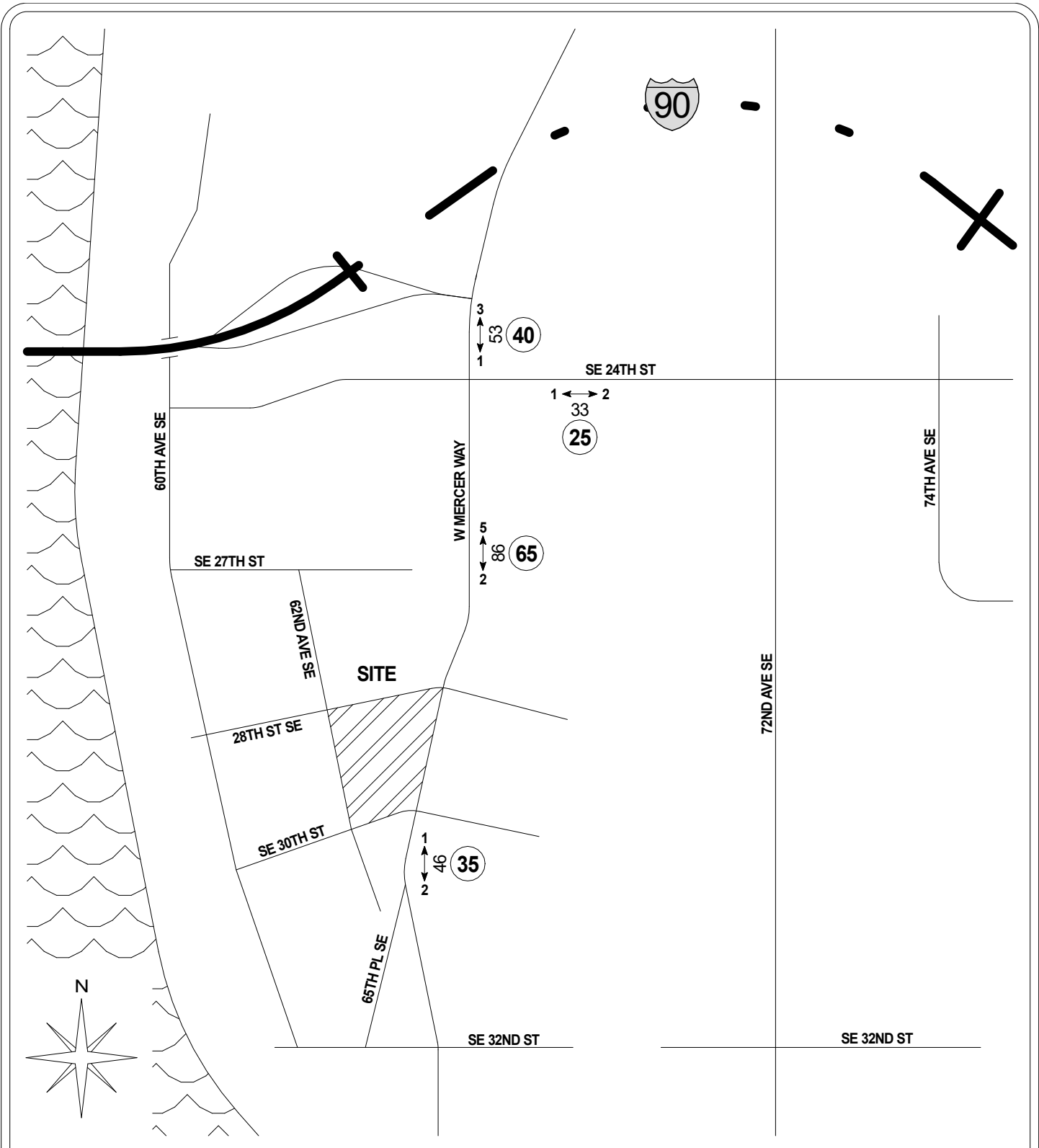
Table 3: Trip Generation Summary

2825 W Mercer Way 14 New SFD Units	Average Daily Trips			AM Peak-Hour Trips			PM Peak-Hour Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
Generation Rate	9.44 trips per unit			0.74 trips per unit			0.99 trips per unit		
Splits	50%	50%	100%	25%	75%	100%	63%	37%	100%
Trips	66	66	132	3	7	10	9	5	14

The 2825 W Mercer Way development will generate approximately 132 average daily trips with 10 AM peak-hour trips and 14 PM peak-hour trips.

5.2 Trip Distribution

The trip distribution is based on local counts and draw areas in the site vicinity. It was assumed for the worst-case analysis that all the development traffic will utilize the intersection of W Mercer Way at SE 28th Street. There would be 65% to/from the north and 35% to/from the south. At the intersection of W Mercer Way at SE 24th Street the sixty-five percent will split with forty percent continuing north and twenty-five percent heading to/from the east. A detailed trip distribution for the AM and PM peak-hours is included in Figure 4 and Figure 5, respectively.



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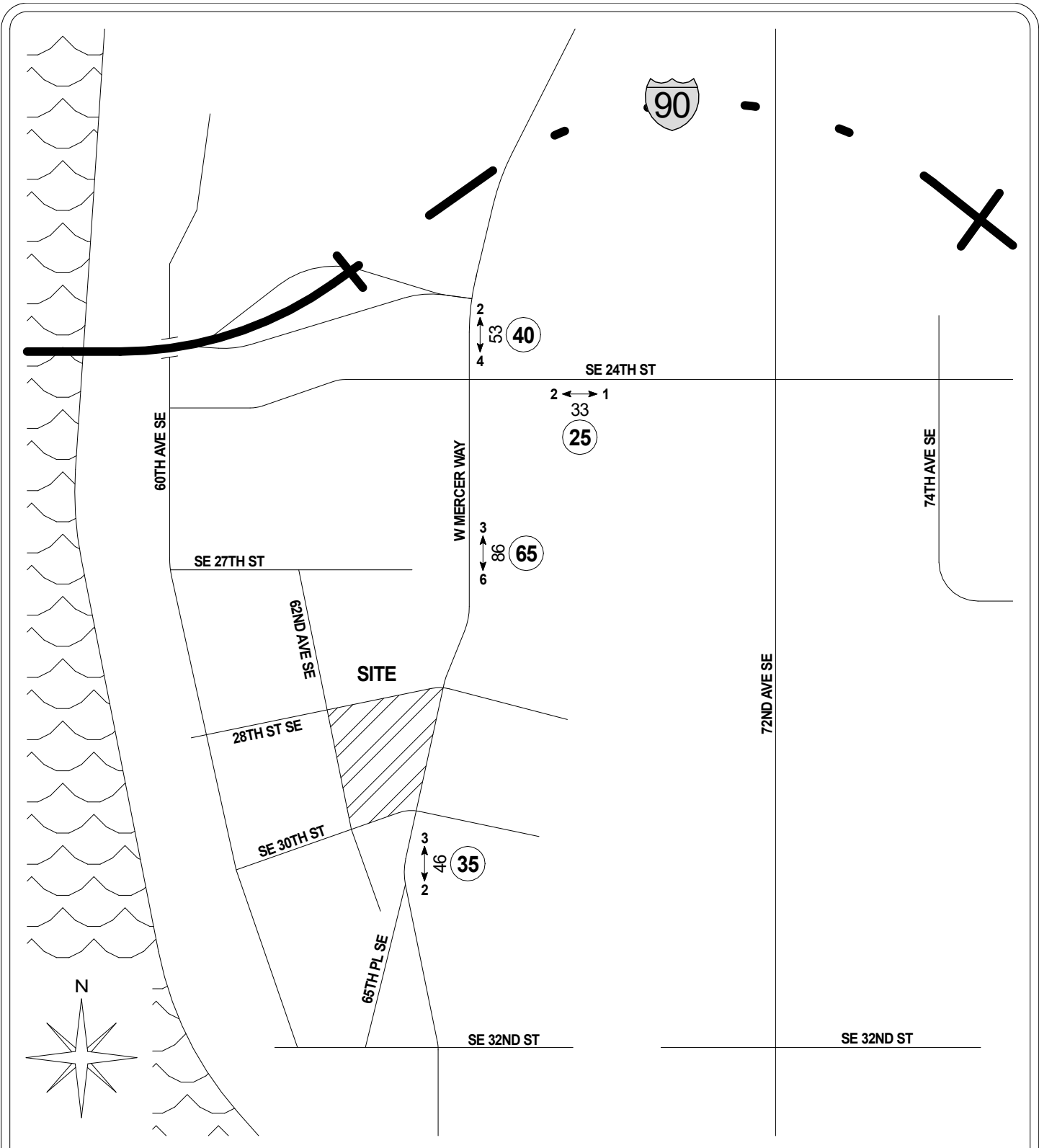
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**2825 W MERCER WAY
14 NEW SINGLE-FAMILY
DETACHED UNITS**

LEGEND
 AM ← AWDT → PEAK
 (30)
 NEW DAILY TRAFFIC
 NEW AM PEAK HOUR TRIPS
 TRIP DISTRIBUTION %

**FIGURE 4
DEVELOPMENT
TRIP DISTRIBUTION
AM PEAK-HOUR**

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**2825 W MERCER WAY
14 NEW SINGLE-FAMILY
DETACHED UNITS**

LEGEND
 AWDT
 PM ← → PEAK
 (30)
 NEW DAILY TRAFFIC
 NEW PM PEAK HOUR TRIPS
 TRIP DISTRIBUTION %

**FIGURE 5
DEVELOPMENT
TRIP DISTRIBUTION
PM PEAK-HOUR**

MERCER ISLAND

5.3 2024 Baseline Volumes and Level of Service

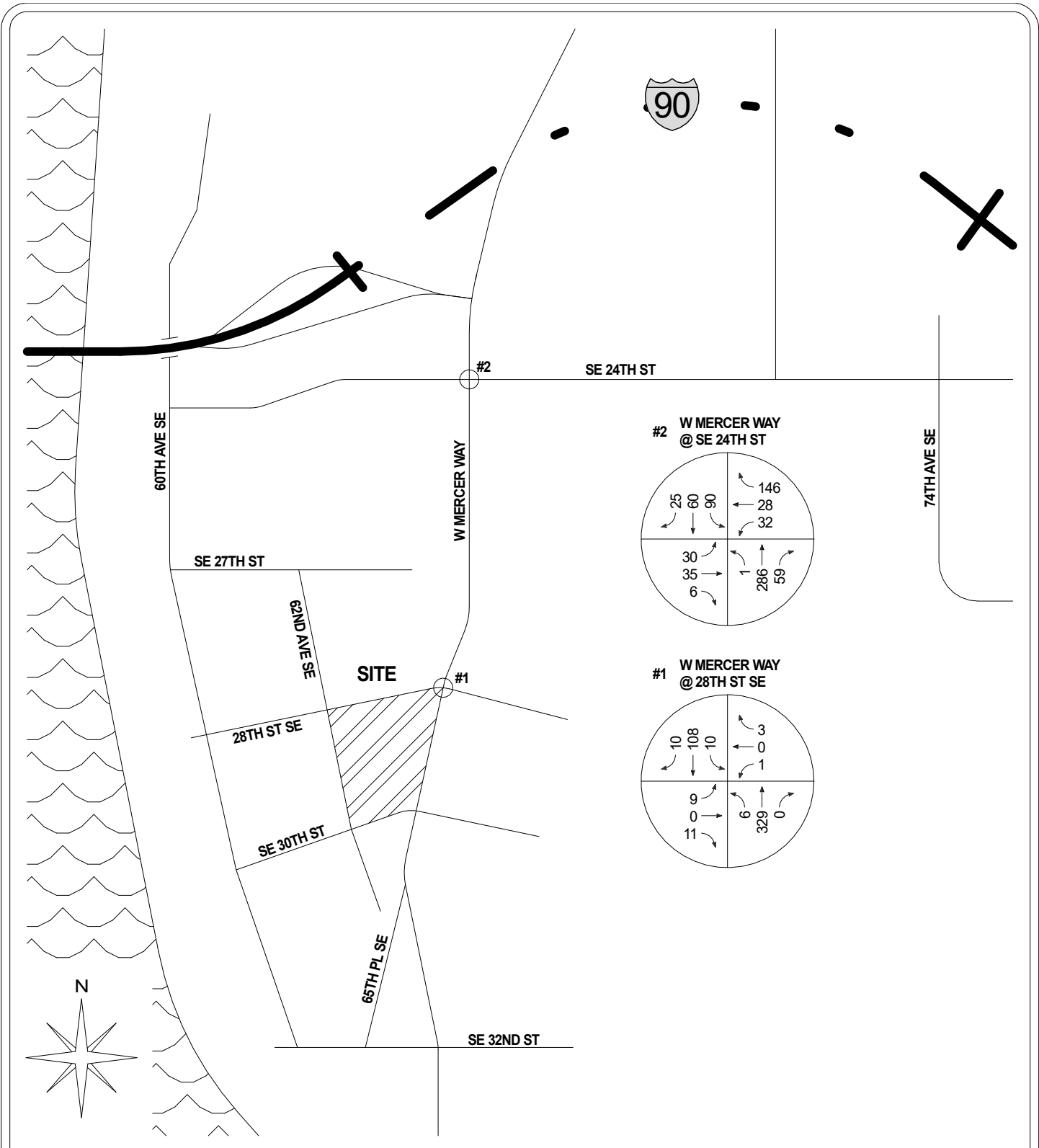
The 2024 baseline (future without development) turning movement volumes are estimated by applying a 0.5% annual compounded growth rate to the existing turning movement volumes, per the Traffic Impact Analysis Guidelines. The 2024 baseline AM and PM peak-hour turning movement volumes are shown in Figure 6 and Figure 7, respectively. Under the 2024 baseline conditions, the study intersections will continue to operate at LOS B. The level of service is summarized in Table 4.

5.4 2024 Future with Development Volumes and Level of Service

The 2024 future with development turning movement volumes are derived by adding the development trips to the 2024 baseline turning movement volumes. The 2024 future with development AM and PM peak-hour turning movement volumes are shown in Figure 8 and Figure 9, respectively. Under the 2024 future with development conditions, the study intersections will continue to operate at acceptable LOS B. The level of service is summarized in Table 4.

Table 4: Future Level of Service Summary

Intersection	Time Period	Normalized Existing Conditions		2024 Baseline Conditions		2024 Future with Development Conditions	
		LOS	Delay	LOS	Delay	LOS	Delay
1. W Mercer Way at SE 28 th Street	AM	B	10.9 sec	B	11.0 sec	B	11.3 sec
	PM	B	12.1 sec	B	12.2 sec	B	12.2 sec
2. W Mercer Wat at SE 24 th Street	AM	B	10.7 sec	B	11.1 sec	B	11.2 sec
	PM	B	11.0 sec	B	11.3 sec	B	11.4 sec



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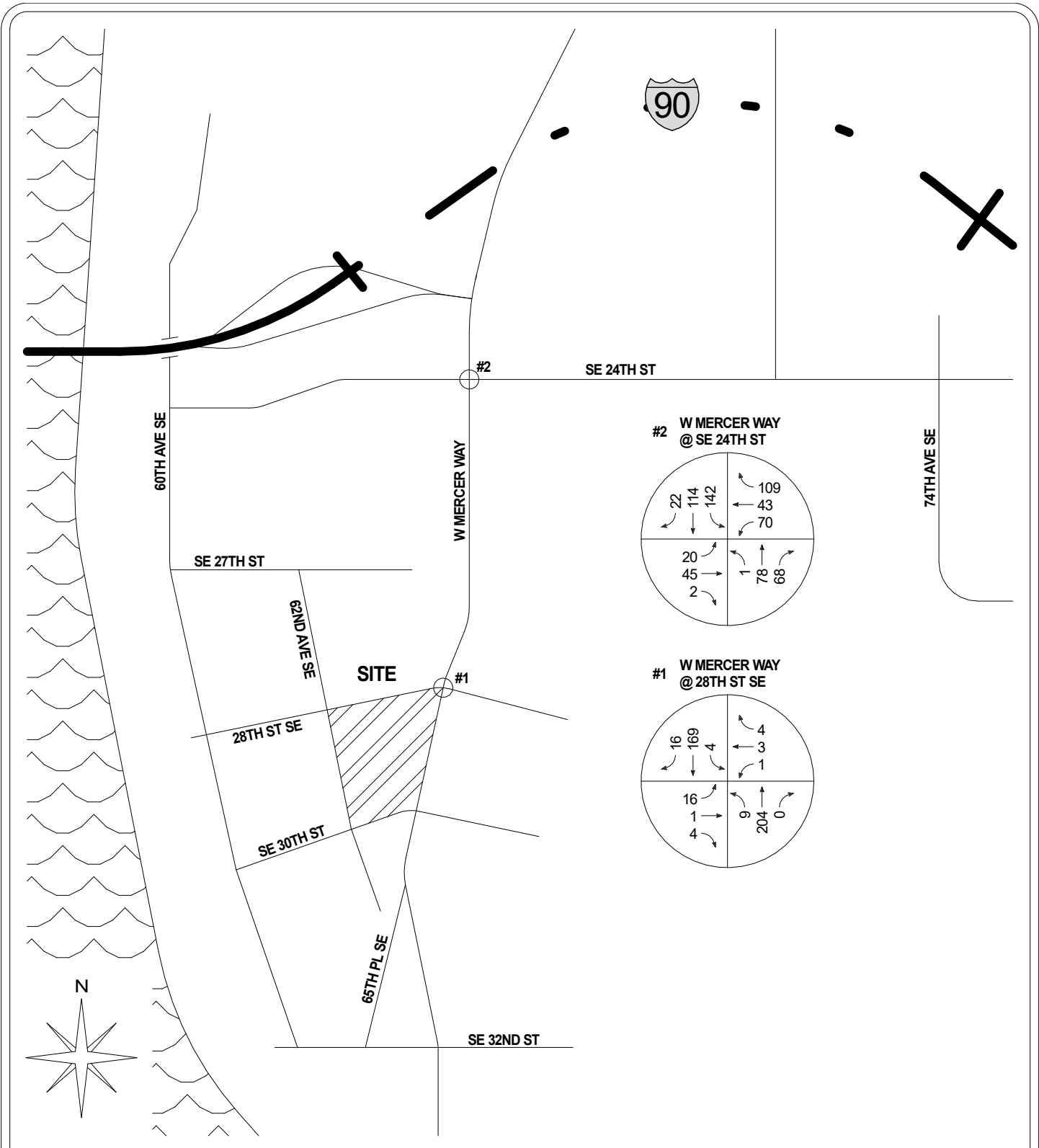
**2825 W MERCER WAY
14 NEW SINGLE-FAMILY
DETACHED UNITS**

LEGEND

XXX → AM PEAK HOUR
TURNING MOVEMENT VOLUMES

**FIGURE 6
2024 BASELINE
TURNING MOVEMENTS
AM PEAK-HOUR**

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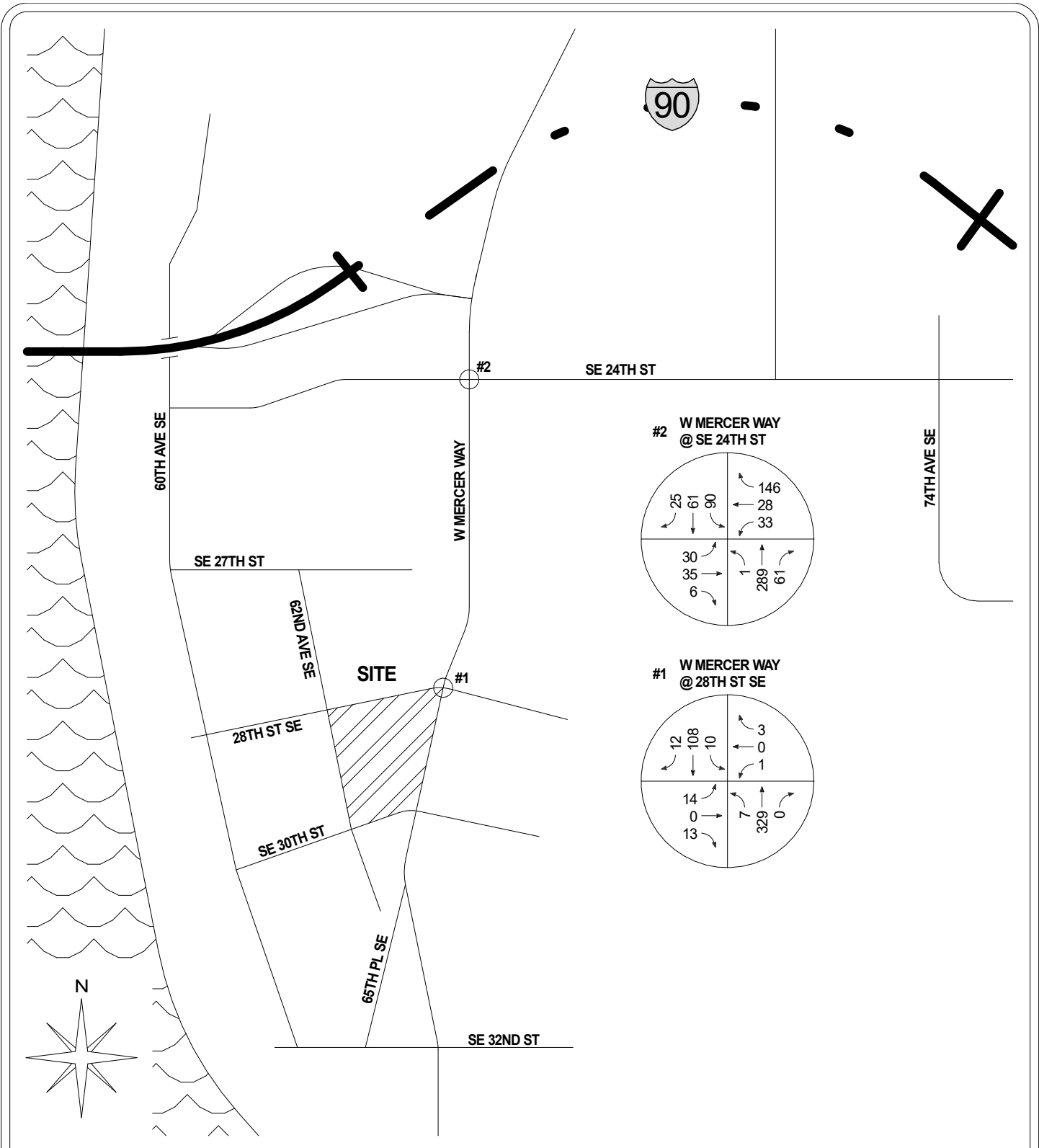
**2825 W MERCER WAY
14 NEW SINGLE-FAMILY
DETACHED UNITS**

LEGEND

xxx → PM PEAK HOUR
TURNING MOVEMENT VOLUMES

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**FIGURE 7
2024 BASELINE
TURNING MOVEMENTS
PM PEAK-HOUR**



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GTC #19-199**

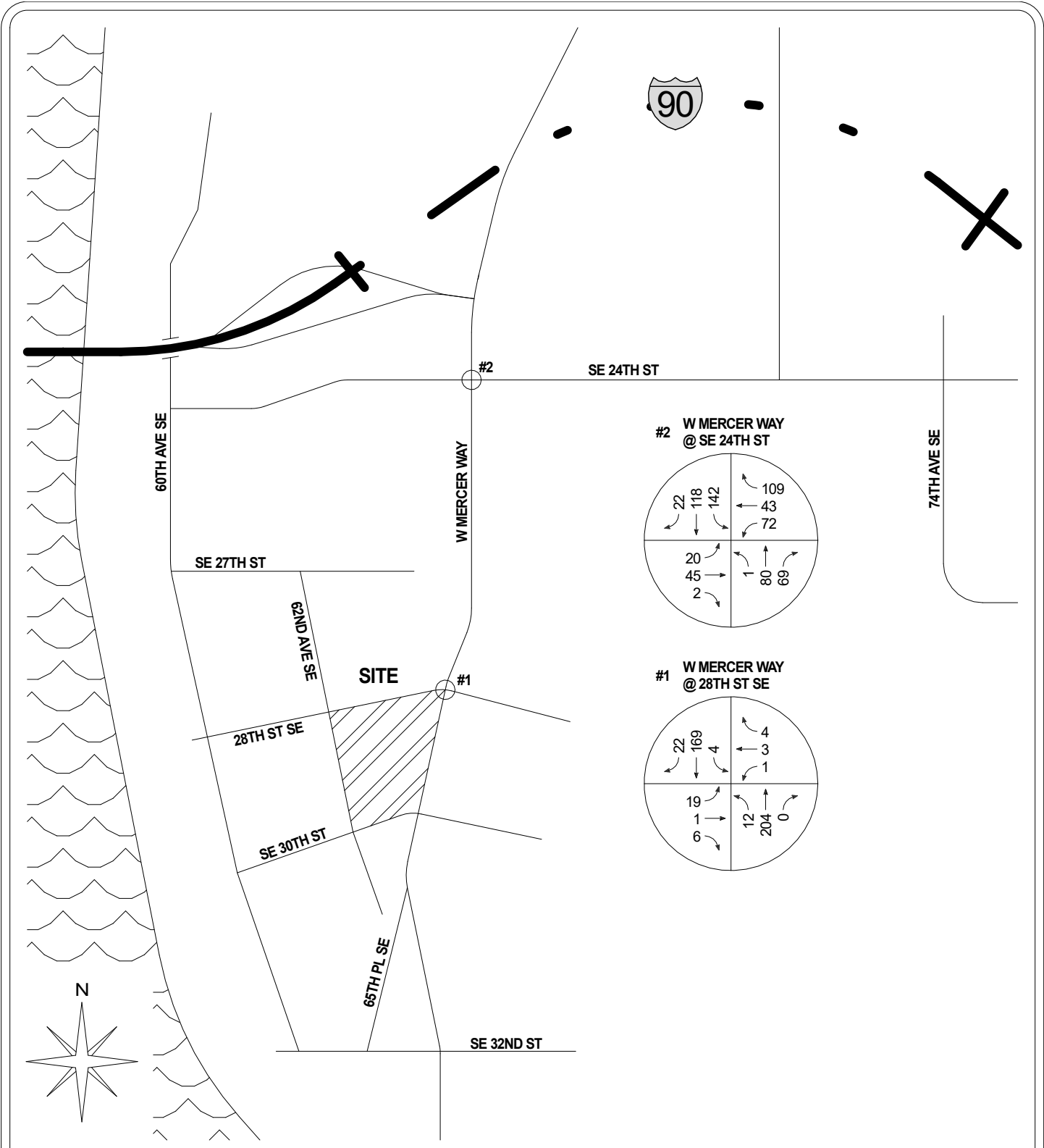
**2825 W MERCER WAY
14 NEW SINGLE-FAMILY
DETACHED UNITS**

LEGEND

xxx → AM PEAK HOUR
TURNING MOVEMENT VOLUMES

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**FIGURE 8
2024 FUTURE
WITH DEVELOPMENT
TURNING MOVEMENTS
AM PEAK-HOUR**



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**2825 W MERCER WAY
14 NEW SINGLE-FAMILY
DETACHED UNITS**

LEGEND

XXX → PM PEAK HOUR
TURNING MOVEMENT VOLUMES

MERCER ISLAND

**FIGURE 9
2024 FUTURE
WITH DEVELOPMENT
TURNING MOVEMENTS
PM PEAK-HOUR**

6. TRAFFIC MITIGATION

The 2825 W Mercer Way development is in the City of Mercer Island; therefore, traffic mitigation fees will need to be paid. The City has a traffic mitigation fee of \$4,533.70 per new unit based on Residential Fee Schedule. There will be 14 new units and the development will have a mitigation fee of \$63,471.80.

As both study intersections operate at an acceptable level of service with the development there should be no requirement for any additional off-site traffic mitigation. In addition, no other intersections would be impacted with 10 or more peak-hour trips.

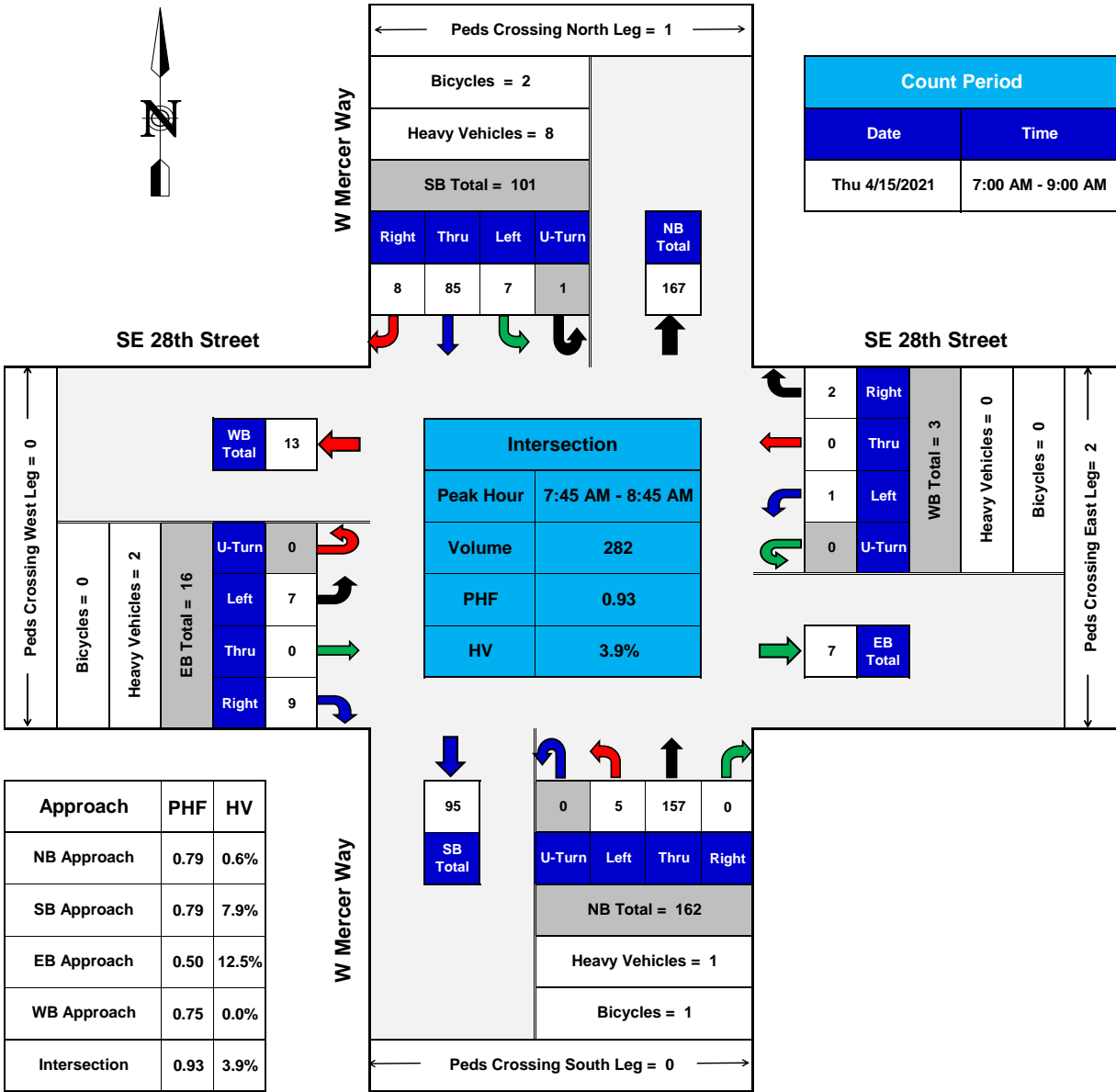
7. CONCLUSIONS

The 2825 W Mercer Way development is proposed to construct 14 single-family residential units. The development is anticipated to generate approximately 132 new average daily trips with 10 AM peak-hour trips and 14 PM peak-hour trips. The study intersections are expected to operate at an acceptable level of service in the 2024 future with development conditions. The total mitigation fees for the 2825 W Mercer Way development are \$63,471.80.

AM & PM Counts

W Mercer Way @ SE 28th Street

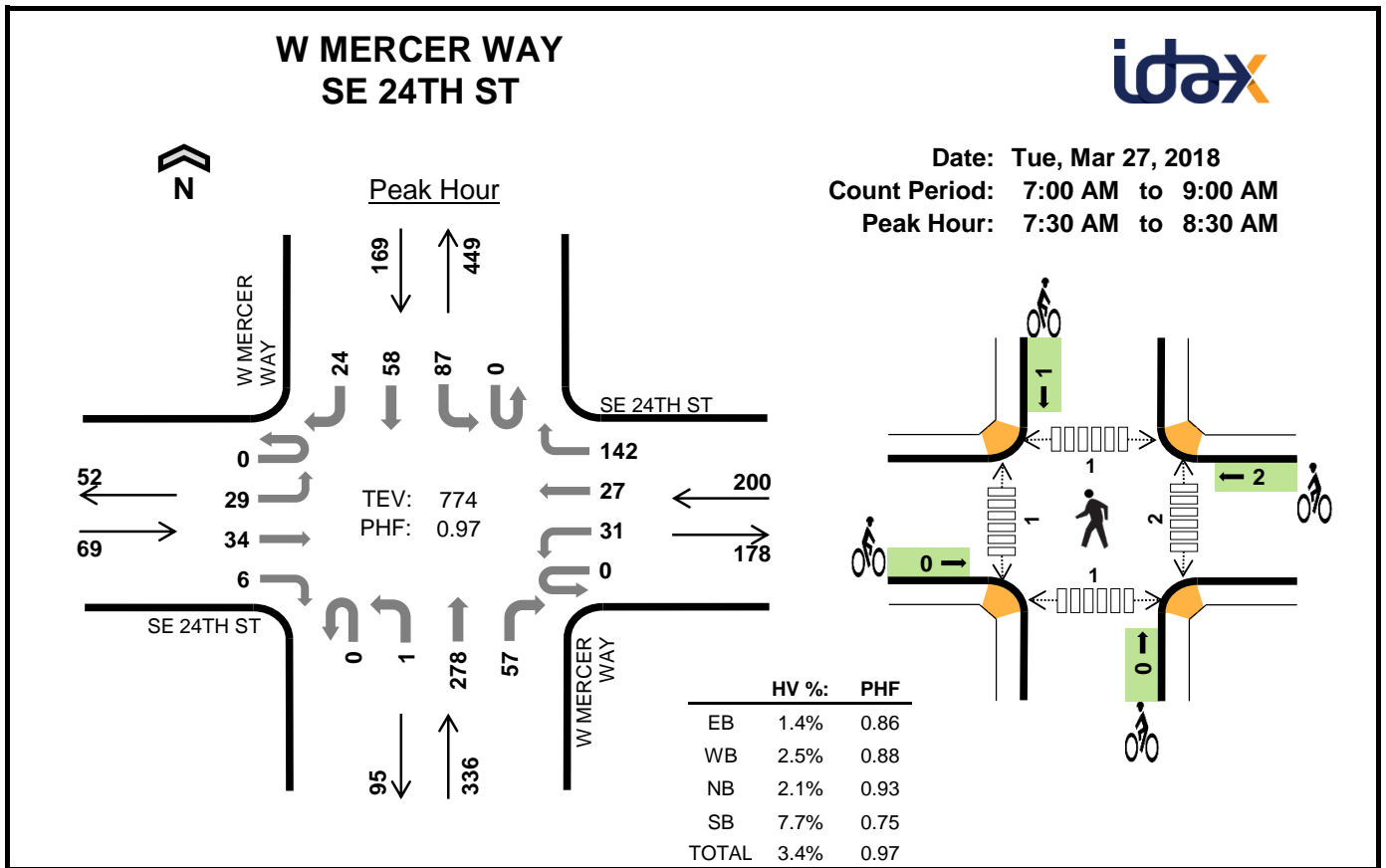
Mercer Island, WA



PHF = Peak Hour Factor
HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM PEAK HOUR SUMMARY





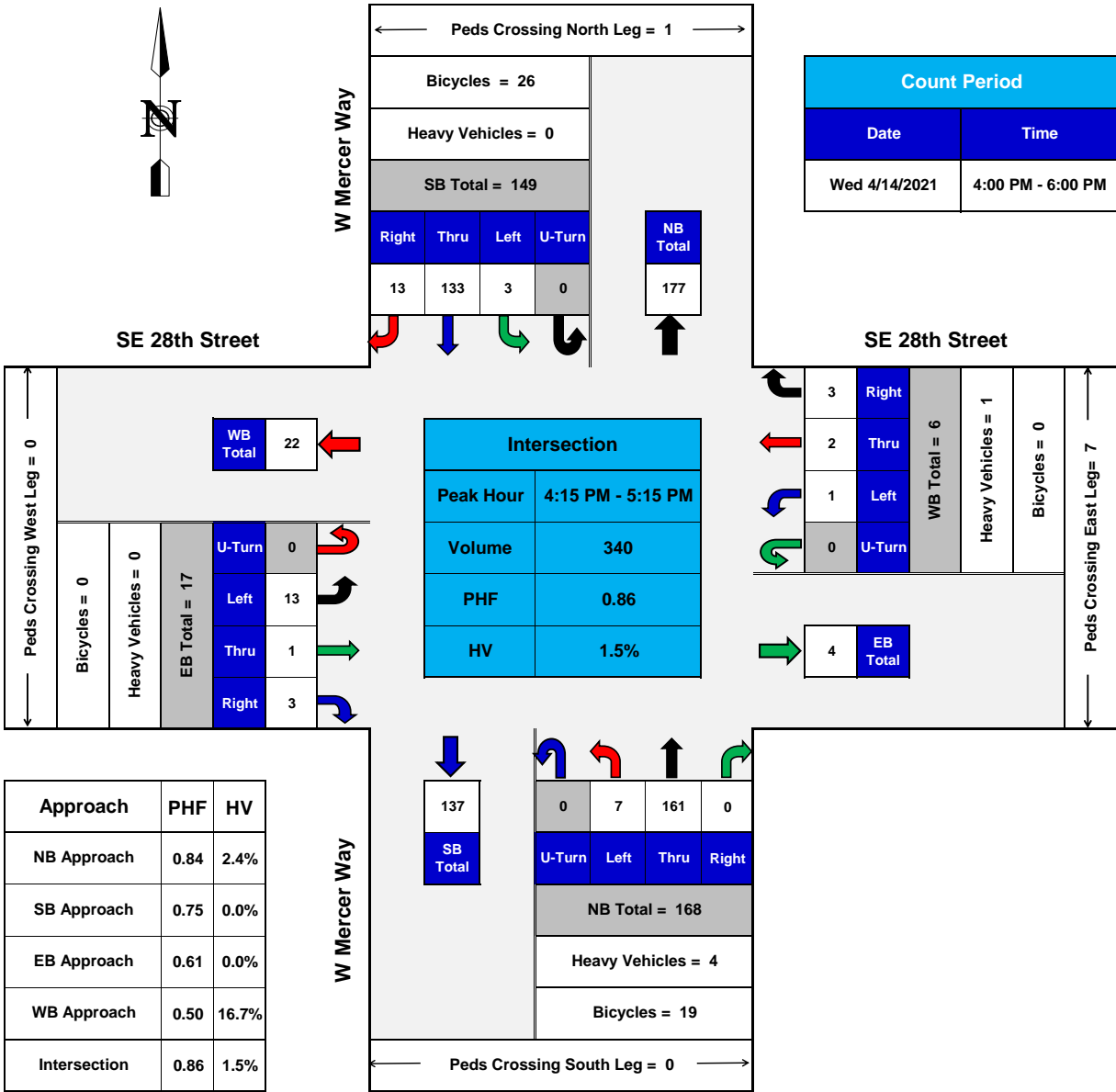
Two-Hour Count Summaries

Interval Start	SE 24TH ST Eastbound				SE 24TH ST Westbound				W MERCER WAY Northbound				W MERCER WAY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	5	2	0	0	5	4	26	0	0	56	12	0	19	11	3	143	0
7:15 AM	0	7	9	2	0	9	3	28	0	0	51	9	0	17	5	5	145	0
7:30 AM	0	8	7	5	0	5	5	47	0	0	67	18	0	16	10	8	196	0
7:45 AM	0	6	11	1	0	7	5	35	0	1	75	14	0	23	13	4	195	679
8:00 AM	0	7	13	0	0	11	8	34	0	0	62	9	0	25	24	7	200	736
8:15 AM	0	8	3	0	0	8	9	26	0	0	74	16	0	23	11	5	183	774
8:30 AM	0	12	10	1	0	15	2	34	0	0	44	15	0	38	9	2	182	760
8:45 AM	0	9	9	1	0	9	7	24	0	1	42	20	0	27	13	8	170	735
Count Total	0	62	64	10	0	69	43	254	0	2	471	113	0	188	96	42	1,414	0
Peak Hour	0	29	34	6	0	31	27	142	0	1	278	57	0	87	58	24	774	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	2	2	0	4	0	0	0	0	0	1	0	0	1	2
7:15 AM	0	3	0	1	4	0	0	1	0	1	0	0	1	0	1
7:30 AM	1	0	3	2	6	0	1	0	1	2	0	0	0	0	0
7:45 AM	0	2	1	3	6	0	0	0	0	0	1	1	1	0	3
8:00 AM	0	2	2	3	7	0	1	0	0	1	0	0	0	0	0
8:15 AM	0	1	1	5	7	0	0	0	0	0	1	0	0	1	2
8:30 AM	1	0	1	6	8	0	0	0	0	0	2	0	0	0	2
8:45 AM	1	4	1	1	7	0	0	0	0	0	1	0	0	0	1
Count Total	3	14	11	21	49	0	2	1	1	4	6	1	2	2	11
Peak Hour	1	5	7	13	26	0	2	0	1	3	2	1	1	1	5

W Mercer Way @ SE 28th Street
Mercer Island, WA



TURNING MOVEMENTS DIAGRAM
PEAK HOUR SUMMARY



DIG TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS REDUCTION SHEET

LOCATION: W Mercer Way @ SE 28th Street DATE OF COUNT: Wed. 4/14/2021 COUNTED BY: TDG
Mercer Island, WA START OF COUNT: 4:00 PM DATE OF REDUCTION: 4/19/2021
 TIME OF COUNT: 4:00 PM - 6:00 PM DURATION OF COUNT (Hrs): 2

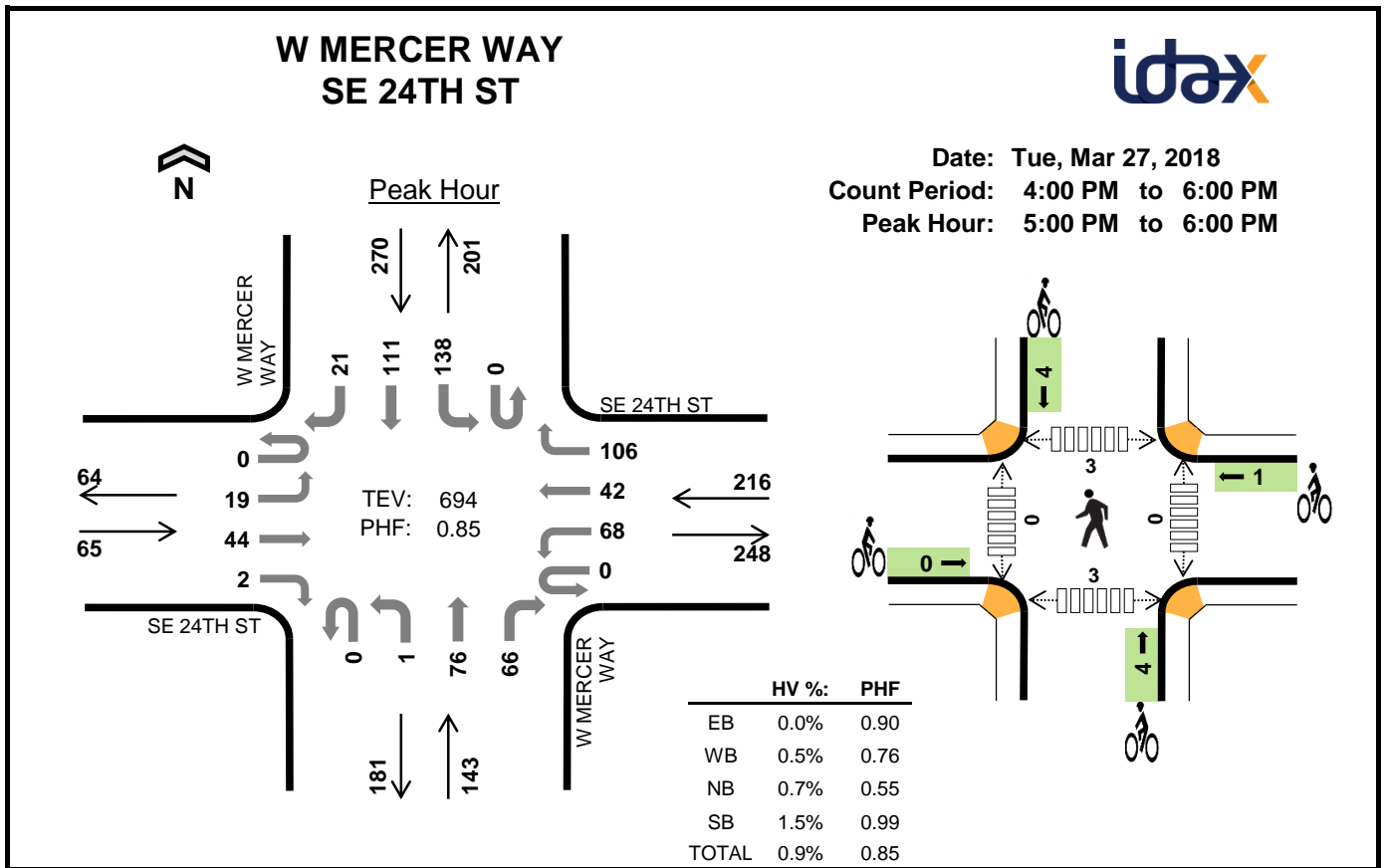
TIME INTERVAL ENDING AT	FROM NORTH ON						FROM SOUTH ON						FROM EAST ON						FROM WEST ON						INTERVAL TOTALS					
	W Mercer Way						W Mercer Way						SE 28th Street						SE 28th Street											
	Peds	Bicycle	HV	U-Turn	Left	Thru	Peds	Bicycle	HV	U-Turn	Left	Thru	Peds	Bicycle	HV	U-Turn	Left	Thru	Peds	Bicycle	HV	U-Turn	Left	Thru		Peds	Bicycle	HV	U-Turn	Left
04:15 PM	0	7	0	0	0	32	4	0	0	1	52	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	2
04:30 PM	0	7	0	0	1	20	2	0	2	48	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	7	0	0	
04:45 PM	0	5	0	0	0	20	6	0	5	37	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	
05:00 PM	0	7	0	0	1	46	3	0	2	33	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	0	2	
05:15 PM	1	7	0	0	1	47	2	0	8	43	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	
05:30 PM	1	9	0	0	1	35	3	0	5	33	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	3	
05:45 PM	0	10	0	0	2	31	2	0	8	23	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	
06:00 PM	0	10	0	0	2	48	1	0	9	40	0	1	0	0	1	1	0	0	0	0	1	0	2	0	0	0	3	0	0	
PEAK HOUR TOTALS	1	26	0	0	3	133	13	0	19	161	0	7	1	0	1	2	3	0	0	0	13	1	3	0	0	0	17	0	3	
ALL MOVEMENTS	149						168						6						17						340					
% HV	0.0%						2.4%						16.7%						0.0%						1.5%					
PEAK HOUR FACTOR	0.75						0.84						0.50						0.61						0.86					

4:00 PM - 6:00 PM PEAK HOUR: 4:15 PM - 5:15 PM

HV = Heavy Vehicle
PHF = Peak Hour Factor

ROLLING HOUR COUNT

TIME INTERVAL	FROM NORTH ON						FROM SOUTH ON						FROM EAST ON						FROM WEST ON						INTERVAL TOTALS					
	W Mercer Way						W Mercer Way						SE 28th Street						SE 28th Street											
	Peds	Bicycle	HV	U-Turn	Left	Thru	Peds	Bicycle	HV	U-Turn	Left	Thru	Peds	Bicycle	HV	U-Turn	Left	Thru	Peds	Bicycle	HV	U-Turn	Left	Thru		Peds	Bicycle	HV	U-Turn	Left
4:00 PM - 5:00 PM	0	26	0	0	2	118	15	0	20	6	5	170	0	5	1	0	1	2	2	1	0	0	14	1	4					
4:15 PM - 5:15 PM	1	26	0	0	3	133	13	0	19	4	7	161	0	7	1	0	1	2	3	0	0	0	13	1	3					
4:30 PM - 5:30 PM	2	28	0	0	3	148	14	0	20	2	7	146	0	8	0	0	1	4	4	1	0	0	8	1	6					
4:45 PM - 5:45 PM	2	33	0	0	5	159	10	0	23	2	8	132	0	7	0	0	1	0	4	1	0	0	6	0	9					
5:00 PM - 6:00 PM	2	36	0	0	6	161	8	0	30	3	8	139	0	7	0	0	1	1	2	3	0	0	7	0	7					
4:00 PM - 6:00 PM Total:	2	62	0	0	8	279	23	0	50	9	13	309	0	12	0	1	0	2	3	4	0	0	21	1	11					



Two-Hour Count Summaries

Interval Start	SE 24TH ST Eastbound				SE 24TH ST Westbound				W MERCER WAY Northbound				W MERCER WAY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	14	1	0	11	8	32	0	0	19	19	0	30	12	4	151	0
4:15 PM	0	10	12	0	0	18	13	16	0	0	29	13	0	23	18	4	156	0
4:30 PM	0	2	15	2	0	16	13	24	0	0	19	12	0	35	25	3	166	0
4:45 PM	0	5	7	2	0	15	5	21	0	0	12	11	0	29	21	7	135	608
5:00 PM	0	4	13	0	0	18	11	42	0	0	16	12	0	32	30	5	183	640
5:15 PM	0	3	11	1	0	15	13	28	0	0	30	35	0	42	23	3	204	688
5:30 PM	0	5	9	1	0	18	9	21	0	1	16	7	0	33	26	8	154	676
5:45 PM	0	7	11	0	0	17	9	15	0	0	14	12	0	31	32	5	153	694
Count Total	0	37	92	7	0	128	81	199	0	1	155	121	0	255	187	39	1,302	0
Peak Hour	0	19	44	2	0	68	42	106	0	1	76	66	0	138	111	21	694	0

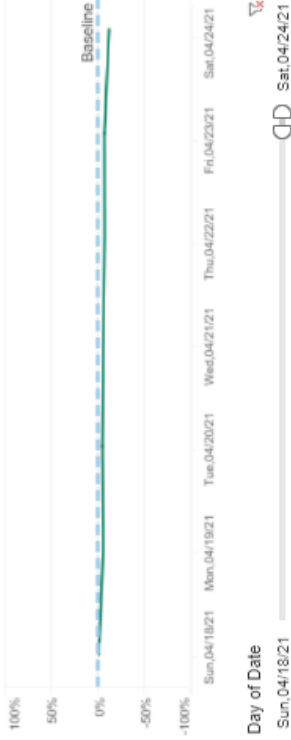
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	3	1	0	5	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	2	1	3	0	0	0	0	0	0	1	1	0	2
4:30 PM	0	1	1	2	4	0	0	0	1	1	0	0	0	0	0
4:45 PM	0	2	1	0	3	0	1	0	2	3	0	1	1	1	3
5:00 PM	0	1	0	2	3	0	0	1	2	3	0	0	0	0	0
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	0	0	0	2	2	0	0	1	2	3
5:45 PM	0	0	0	2	2	0	1	3	0	4	0	0	1	1	2
Count Total	1	7	6	7	21	0	2	4	7	13	0	2	5	4	11
Peak Hour	0	1	1	4	6	0	1	4	4	9	0	0	3	3	6

WSDOT COVID-19 Transportation System Performance Multimodal Executive Summary

Highway Traffic

Data from 32 locations statewide



-8%
compared to Baseline year*

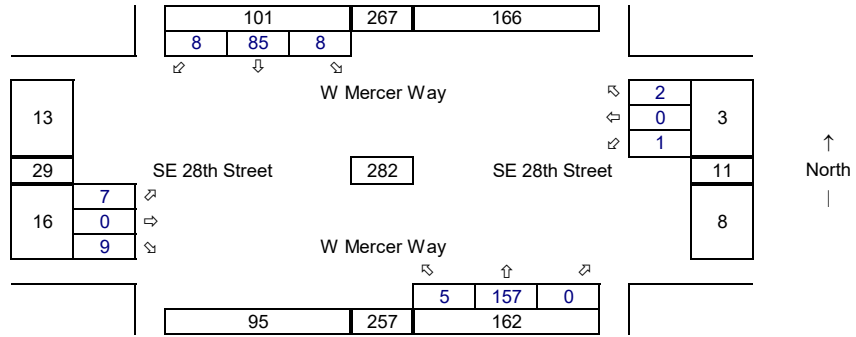
County Highway Day of Date

Darkening boxes indicate a larger change from the baseline

Highway	County	Traffic count location	Sun, 04/18/21	Mon, 04/19/21	Tue, 04/20/21	Wed, 04/21/21	Thu, 04/22/21	Fri, 04/23/21	Sat, 04/24/21
I-90	King	I-90 at I-90 Floating Bridge	-9%	-25%	-25%	-26%	-25%	-24%	-24%
I-90	King	I-90 at West of Bandera	19%	-4%	5%	6%	1%	-8%	-11%

Turning Movement Calculations

Synchro ID: 1
Existing
 Average Weekday
 AM Peak Hour
 Year: 4/15/21
 Data Source: TDG



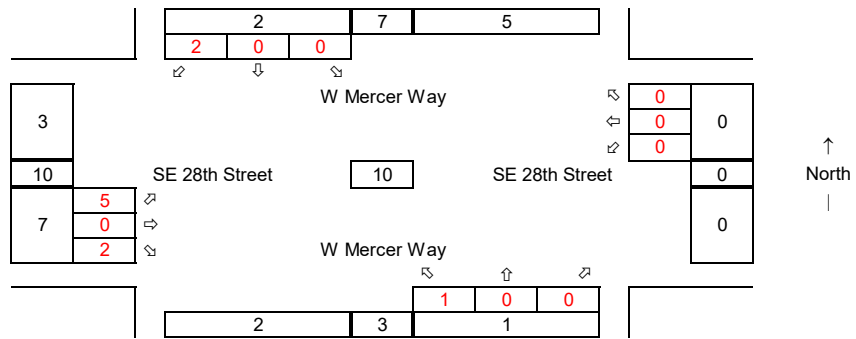
Normalized Existing (COVID-19 Factor)
 Average Weekday
 AM Peak Hour
 Percent Change: 25.0%
 Based on I-90 Volumes during that week. Northbound balanced with SE 24th Street by adding 128 NBT trips.



Future without Project
 Average Weekday
 AM Peak Hour
 Year: 2024
 Growth Rate = 0.5%
 Years of Growth = 3
 Total Growth = 1.0151



Total Project Trips
 Average Weekday
 AM Peak Hour



Future with Project
 Average Weekday
 AM Peak Hour



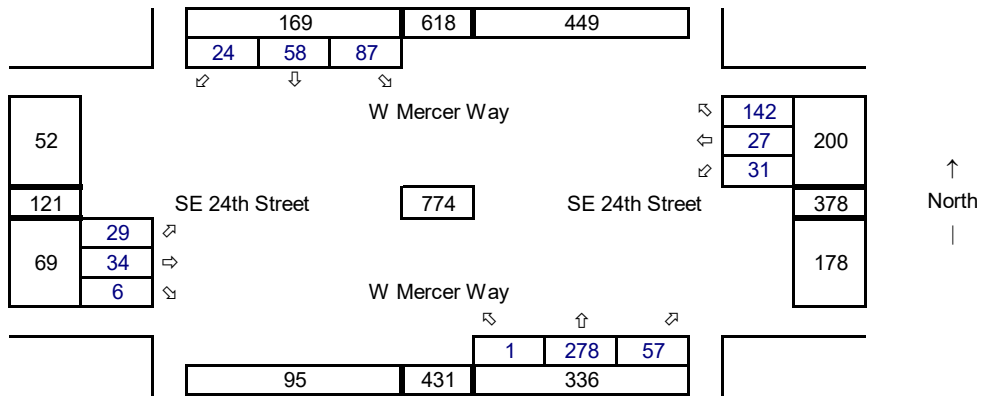
Synchro ID: 2

Existing
Average Weekday
AM Peak Hour

Year: 3/27/18

Data Source: idax

Provided by City pre Covid



Future without Project

Average Weekday
AM Peak Hour

Year: 2024

Growth Rate = 0.5%

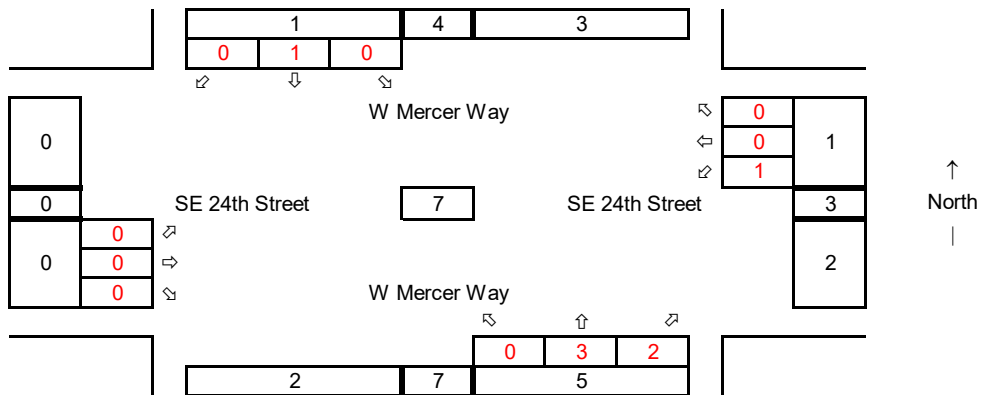
Years of Growth = 6

Total Growth = 1.0304



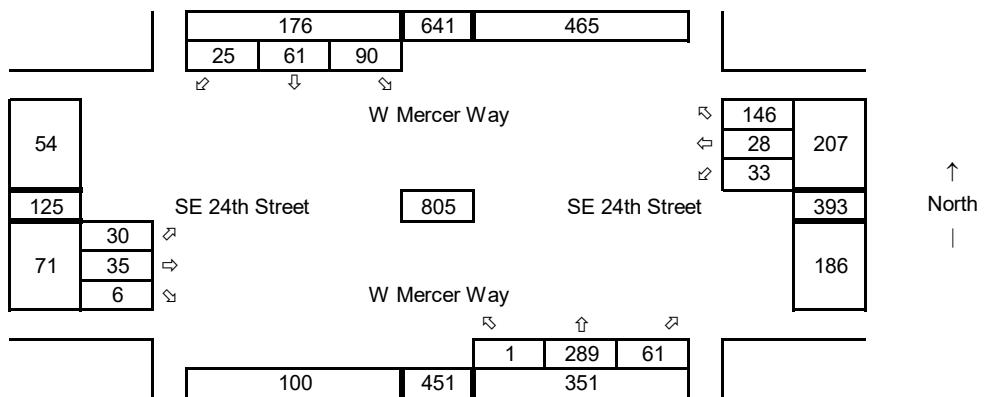
Total Project Trips

Average Weekday
AM Peak Hour

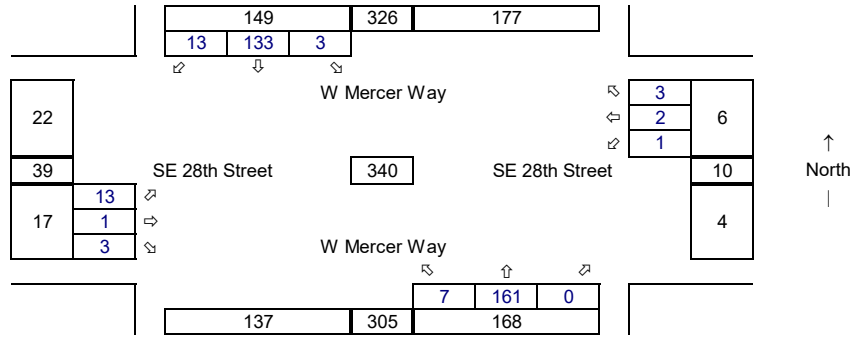


Future with Project

Average Weekday
AM Peak Hour



Synchro ID: 1
Existing
 Average Weekday
 PM Peak Hour
 Year: 4/14/21
 Data Source: TDG



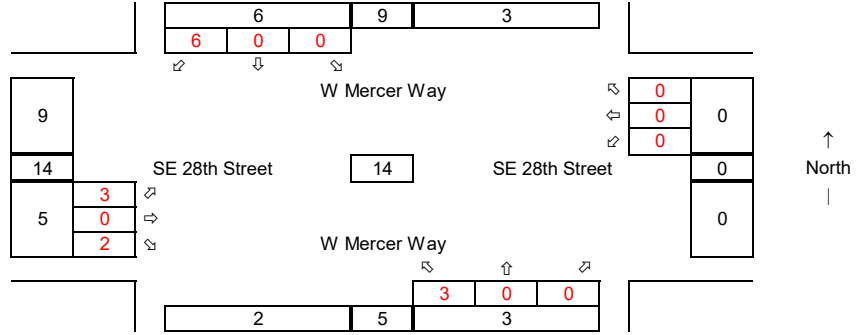
Normalized Existing (COVID-19 Factor)
 Average Weekday
 PM Peak Hour
 Percent Change: 25.0%
 Based on I-90 Volumes during that week. Northbound and Southbound volumes higher than SE 24th, no modifications



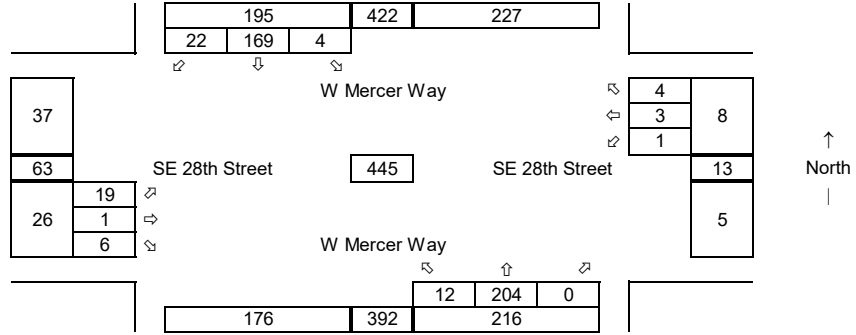
Future without Project
 Average Weekday
 PM Peak Hour
 Year: 2024
 Growth Rate = 0.5%
 Years of Growth = 3
 Total Growth = 1.0151



Total Project Trips
 Average Weekday
 PM Peak Hour



Future with Project
 Average Weekday
 PM Peak Hour



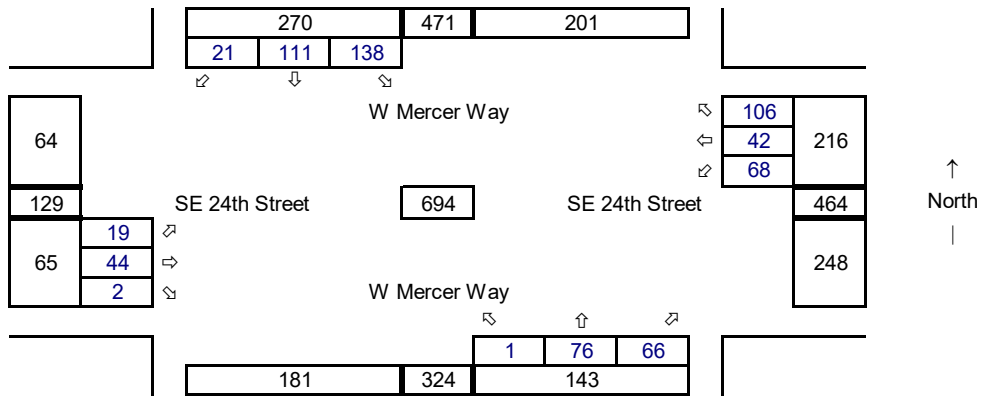
Synchro ID: 2

Existing
Average Weekday
PM Peak Hour

Year: 3/27/18

Data Source: idax

Provided by City pre Covid



Future without Project

Average Weekday
PM Peak Hour

Year: 2024

Growth Rate = 0.5%

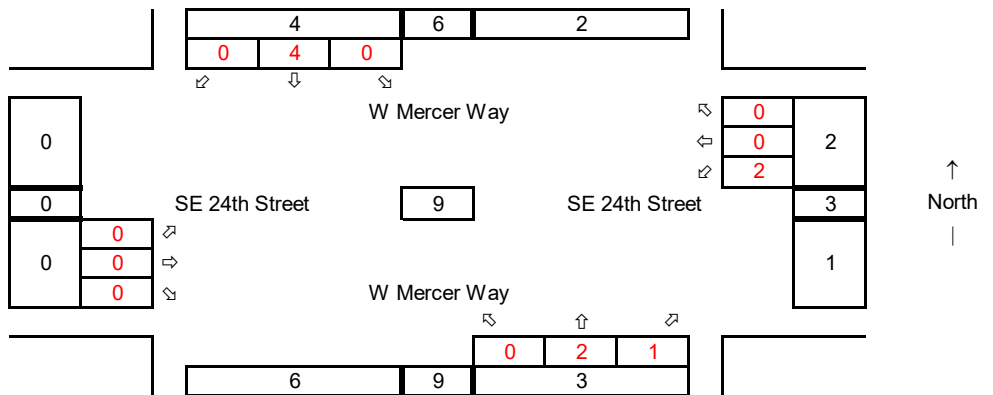
Years of Growth = 6

Total Growth = 1.0304



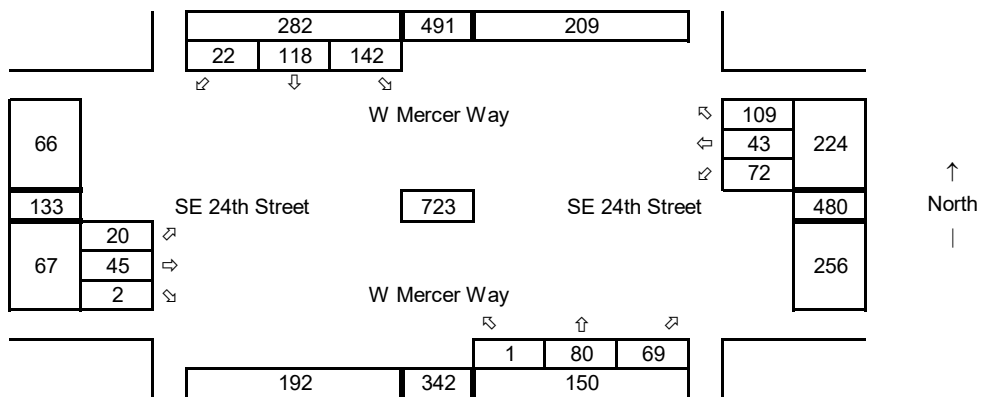
Total Project Trips

Average Weekday
PM Peak Hour



Future with Project

Average Weekday
PM Peak Hour



AM Level of Service Calculations

HCM 6th TWSC
1: W Mercer Way & SE 28th St

2825 W Mercer Way (19-199)

Intersection

Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	9	0	11	1	0	3	6	324	0	10	106	10
Future Vol, veh/h	9	0	11	1	0	3	6	324	0	10	106	10
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	10	0	12	1	0	3	6	348	0	11	114	11

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	505	504	120	510	509	351	125	0	0	350	0	0
Stage 1	142	142	-	362	362	-	-	-	-	-	-	-
Stage 2	363	362	-	148	147	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	474	467	926	471	464	688	1449	-	-	1198	-	-
Stage 1	856	775	-	652	622	-	-	-	-	-	-	-
Stage 2	652	622	-	850	772	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	466	459	926	459	456	686	1449	-	-	1196	-	-
Mov Cap-2 Maneuver	466	459	-	459	456	-	-	-	-	-	-	-
Stage 1	852	767	-	647	618	-	-	-	-	-	-	-
Stage 2	645	618	-	831	764	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.8		10.9		0.1		0.6	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1449	-	-	641	611	1196	-
HCM Lane V/C Ratio	0.004	-	-	0.034	0.007	0.009	-
HCM Control Delay (s)	7.5	0	-	10.8	10.9	8	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

Existing AM
GTC (MJP)

AM Peak

HCM 6th AWSC
 2: W Mercer Way & SE 24th St

2825 W Mercer Way (19-199)

Intersection

Intersection Delay, s/veh 10.7
 Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	34	6	31	27	142	1	278	57	87	58	24
Future Vol, veh/h	29	34	6	31	27	142	1	278	57	87	58	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	30	35	6	32	28	146	1	287	59	90	60	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.3			9.9			11.9			9.9		
HCM LOS	A			A			B			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	42%	15%	51%
Vol Thru, %	83%	49%	14%	34%
Vol Right, %	17%	9%	71%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	336	69	200	169
LT Vol	1	29	31	87
Through Vol	278	34	27	58
RT Vol	57	6	142	24
Lane Flow Rate	346	71	206	174
Geometry Grp	1	1	1	1
Degree of Util (X)	0.458	0.111	0.28	0.246
Departure Headway (Hd)	4.765	5.636	4.897	5.089
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	748	639	724	697
Service Time	2.848	3.636	2.992	3.188
HCM Lane V/C Ratio	0.463	0.111	0.285	0.25
HCM Control Delay	11.9	9.3	9.9	9.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.4	0.4	1.1	1

Existing AM
 GTC (MJP)

AM Peak

HCM 6th TWSC
1: W Mercer Way & SE 28th St

2825 W Mercer Way (19-199)

Intersection

Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	9	0	11	1	0	3	6	329	0	10	108	10
Future Vol, veh/h	9	0	11	1	0	3	6	329	0	10	108	10
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	10	0	12	1	0	3	6	354	0	11	116	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	513	512	122	518	517	357	127	0	0	356	0	0
Stage 1	144	144	-	368	368	-	-	-	-	-	-	-
Stage 2	369	368	-	150	149	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	469	462	924	465	459	683	1447	-	-	1192	-	-
Stage 1	854	774	-	648	618	-	-	-	-	-	-	-
Stage 2	647	618	-	848	770	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	461	454	924	453	451	681	1447	-	-	1190	-	-
Mov Cap-2 Maneuver	461	454	-	453	451	-	-	-	-	-	-	-
Stage 1	850	766	-	643	614	-	-	-	-	-	-	-
Stage 2	640	614	-	829	762	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	11	0.1	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	636	605	1190	-
HCM Lane V/C Ratio	0.004	-	-	0.034	0.007	0.009	-
HCM Control Delay (s)	7.5	0	-	10.9	11	8.1	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

HCM 6th AWSC
2: W Mercer Way & SE 24th St

2825 W Mercer Way (19-199)

Intersection

Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	35	6	32	28	146	1	286	59	90	60	25
Future Vol, veh/h	30	35	6	32	28	146	1	286	59	90	60	25
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	31	36	6	33	29	151	1	295	61	93	62	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.5			10.2			12.5			10.1		
HCM LOS	A			B			B			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	42%	16%	51%
Vol Thru, %	83%	49%	14%	34%
Vol Right, %	17%	8%	71%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	346	71	206	175
LT Vol	1	30	32	90
Through Vol	286	35	28	60
RT Vol	59	6	146	25
Lane Flow Rate	357	73	212	180
Geometry Grp	1	1	1	1
Degree of Util (X)	0.487	0.116	0.298	0.263
Departure Headway (Hd)	4.912	5.709	5.049	5.238
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	738	627	711	686
Service Time	2.912	3.75	3.082	3.266
HCM Lane V/C Ratio	0.484	0.116	0.298	0.262
HCM Control Delay	12.5	9.5	10.2	10.1
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	2.7	0.4	1.2	1.1

HCM 6th TWSC
1: W Mercer Way & SE 28th St

2825 W Mercer Way (19-199)

Intersection

Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	14	0	13	1	0	3	7	329	0	10	108	12
Future Vol, veh/h	14	0	13	1	0	3	7	329	0	10	108	12
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	15	0	14	1	0	3	8	354	0	11	116	13

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	518	517	123	524	523	357	129	0	0	356	0	0
Stage 1	145	145	-	372	372	-	-	-	-	-	-	-
Stage 2	373	372	-	152	151	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	465	459	923	461	456	683	1444	-	-	1192	-	-
Stage 1	853	773	-	644	615	-	-	-	-	-	-	-
Stage 2	644	615	-	846	769	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	457	450	923	448	447	681	1444	-	-	1190	-	-
Mov Cap-2 Maneuver	457	450	-	448	447	-	-	-	-	-	-	-
Stage 1	847	765	-	638	609	-	-	-	-	-	-	-
Stage 2	636	609	-	825	761	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.3	11	0.2	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1444	-	-	604	603	1190	-	-
HCM Lane V/C Ratio	0.005	-	-	0.048	0.007	0.009	-	-
HCM Control Delay (s)	7.5	0	-	11.3	11	8.1	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 6th AWSC
 2: W Mercer Way & SE 24th St

2825 W Mercer Way (19-199)

Intersection

Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	35	6	33	28	146	1	289	61	90	61	25
Future Vol, veh/h	30	35	6	33	28	146	1	289	61	90	61	25
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	31	36	6	34	29	151	1	298	63	93	63	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.5			10.3			12.6			10.2		
HCM LOS	A			B			B			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	42%	16%	51%
Vol Thru, %	82%	49%	14%	35%
Vol Right, %	17%	8%	71%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	351	71	207	176
LT Vol	1	30	33	90
Through Vol	289	35	28	61
RT Vol	61	6	146	25
Lane Flow Rate	362	73	213	181
Geometry Grp	1	1	1	1
Degree of Util (X)	0.494	0.116	0.3	0.265
Departure Headway (Hd)	4.916	5.729	5.068	5.249
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	738	625	708	684
Service Time	2.916	3.77	3.102	3.278
HCM Lane V/C Ratio	0.491	0.117	0.301	0.265
HCM Control Delay	12.6	9.5	10.3	10.2
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	2.8	0.4	1.3	1.1

PM Level of Service Calculations

HCM 6th TWSC
1: W Mercer Way & SE 28th St

2825 W Mercer Way (19-199)

Intersection

Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	16	1	4	1	3	4	9	201	0	4	166	16
Future Vol, veh/h	16	1	4	1	3	4	9	201	0	4	166	16
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	7	7	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	1	5	1	3	5	10	234	0	5	193	19

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	472	474	203	477	483	242	212	0	0	241	0	0
Stage 1	213	213	-	261	261	-	-	-	-	-	-	-
Stage 2	259	261	-	216	222	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	502	489	838	498	483	797	1358	-	-	1326	-	-
Stage 1	789	726	-	744	692	-	-	-	-	-	-	-
Stage 2	746	692	-	786	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	491	480	838	487	474	792	1358	-	-	1318	-	-
Mov Cap-2 Maneuver	491	480	-	487	474	-	-	-	-	-	-	-
Stage 1	783	723	-	734	682	-	-	-	-	-	-	-
Stage 2	731	682	-	777	717	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.1		11.1		0.3		0.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1358	-	-	532	596	1318	-
HCM Lane V/C Ratio	0.008	-	-	0.046	0.016	0.004	-
HCM Control Delay (s)	7.7	0	-	12.1	11.1	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

Existing PM
GTC (MJP)

PM Peak

HCM 6th AWSC
2: W Mercer Way & SE 24th St

2825 W Mercer Way (19-199)

Intersection

Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	19	44	2	68	42	106	1	76	66	138	111	21
Future Vol, veh/h	19	44	2	68	42	106	1	76	66	138	111	21
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	22	52	2	80	49	125	1	89	78	162	131	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.4			10.9			9.6			12.3		
HCM LOS	A			B			A			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	29%	31%	51%
Vol Thru, %	53%	68%	19%	41%
Vol Right, %	46%	3%	49%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	65	216	270
LT Vol	1	19	68	138
Through Vol	76	44	42	111
RT Vol	66	2	106	21
Lane Flow Rate	168	76	254	318
Geometry Grp	1	1	1	1
Degree of Util (X)	0.234	0.12	0.358	0.453
Departure Headway (Hd)	5.003	5.632	5.071	5.134
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	717	635	709	705
Service Time	3.036	3.673	3.104	3.134
HCM Lane V/C Ratio	0.234	0.12	0.358	0.451
HCM Control Delay	9.6	9.4	10.9	12.3
HCM Lane LOS	A	A	B	B
HCM 95th-tile Q	0.9	0.4	1.6	2.4

Existing PM
GTC (MJP)

PM Peak

HCM 6th TWSC
 1: W Mercer Way & SE 28th St

2825 W Mercer Way (19-199)

Intersection

Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	16	1	4	1	3	4	9	204	0	4	169	16
Future Vol, veh/h	16	1	4	1	3	4	9	204	0	4	169	16
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	7	7	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	1	5	1	3	5	10	237	0	5	197	19

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	479	481	207	484	490	245	216	0	0	244	0	0
Stage 1	217	217	-	264	264	-	-	-	-	-	-	-
Stage 2	262	264	-	220	226	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	497	485	833	493	479	794	1354	-	-	1322	-	-
Stage 1	785	723	-	741	690	-	-	-	-	-	-	-
Stage 2	743	690	-	782	717	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	486	476	833	482	470	789	1354	-	-	1314	-	-
Mov Cap-2 Maneuver	486	476	-	482	470	-	-	-	-	-	-	-
Stage 1	778	720	-	730	680	-	-	-	-	-	-	-
Stage 2	728	680	-	773	714	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.2		11.2		0.3		0.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1354	-	-	527	591	1314	-
HCM Lane V/C Ratio	0.008	-	-	0.046	0.016	0.004	-
HCM Control Delay (s)	7.7	0	-	12.2	11.2	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

HCM 6th AWSC
 2: W Mercer Way & SE 24th St

2825 W Mercer Way (19-199)

Intersection

Intersection Delay, s/veh 11.3
 Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	45	2	70	43	109	1	78	68	142	114	22
Future Vol, veh/h	20	45	2	70	43	109	1	78	68	142	114	22
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	24	53	2	82	51	128	1	92	80	167	134	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.6			11.2			9.7			12.7		
HCM LOS	A			B			A			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %		1%	30%	32%	51%
Vol Thru, %		53%	67%	19%	41%
Vol Right, %		46%	3%	49%	8%
Sign Control		Stop	Stop	Stop	Stop
Traffic Vol by Lane		147	67	222	278
LT Vol		1	20	70	142
Through Vol		78	45	43	114
RT Vol		68	2	109	22
Lane Flow Rate		173	79	261	327
Geometry Grp		1	1	1	1
Degree of Util (X)		0.243	0.125	0.372	0.468
Departure Headway (Hd)		5.058	5.7	5.123	5.152
Convergence, Y/N		Yes	Yes	Yes	Yes
Cap		709	628	703	700
Service Time		3.091	3.741	3.154	3.18
HCM Lane V/C Ratio		0.244	0.126	0.371	0.467
HCM Control Delay		9.7	9.6	11.2	12.7
HCM Lane LOS		A	A	B	B
HCM 95th-tile Q		0.9	0.4	1.7	2.5

HCM 6th TWSC
 1: W Mercer Way & SE 28th St

2825 W Mercer Way (19-199)

Intersection

Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	19	1	6	1	3	4	12	204	0	4	169	22
Future Vol, veh/h	19	1	6	1	3	4	12	204	0	4	169	22
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	7	7	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	1	7	1	3	5	14	237	0	5	197	26

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	490	492	210	496	505	245	223	0	0	244	0	0
Stage 1	220	220	-	272	272	-	-	-	-	-	-	-
Stage 2	270	272	-	224	233	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	489	478	830	484	470	794	1346	-	-	1322	-	-
Stage 1	782	721	-	734	685	-	-	-	-	-	-	-
Stage 2	736	685	-	779	712	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	477	467	830	470	460	789	1346	-	-	1314	-	-
Mov Cap-2 Maneuver	477	467	-	470	460	-	-	-	-	-	-	-
Stage 1	773	718	-	721	673	-	-	-	-	-	-	-
Stage 2	719	673	-	768	709	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.2		11.3		0.4		0.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1346	-	-	528	583	1314	-
HCM Lane V/C Ratio	0.01	-	-	0.057	0.016	0.004	-
HCM Control Delay (s)	7.7	0	-	12.2	11.3	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-

HCM 6th AWSC
 2: W Mercer Way & SE 24th St

2825 W Mercer Way (19-199)

Intersection

Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	45	2	72	43	109	1	80	69	142	118	22
Future Vol, veh/h	20	45	2	72	43	109	1	80	69	142	118	22
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	24	53	2	85	51	128	1	94	81	167	139	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	9.6			11.3			9.8			12.8		
HCM LOS	A			B			A			B		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	
Vol Left, %		1%	30%	32%	50%
Vol Thru, %		53%	67%	19%	42%
Vol Right, %		46%	3%	49%	8%
Sign Control		Stop	Stop	Stop	Stop
Traffic Vol by Lane		150	67	224	282
LT Vol		1	20	72	142
Through Vol		80	45	43	118
RT Vol		69	2	109	22
Lane Flow Rate		176	79	264	332
Geometry Grp		1	1	1	1
Degree of Util (X)		0.249	0.126	0.377	0.476
Departure Headway (Hd)		5.078	5.733	5.151	5.168
Convergence, Y/N		Yes	Yes	Yes	Yes
Cap		706	624	698	697
Service Time		3.114	3.775	3.185	3.198
HCM Lane V/C Ratio		0.249	0.127	0.378	0.476
HCM Control Delay		9.8	9.6	11.3	12.8
HCM Lane LOS		A	A	B	B
HCM 95th-tile Q		1	0.4	1.8	2.6

Collision Data

JUNCTION RELATIONSHIP	WEATHER	ROADWAY SURFACE CONDITION	LIGHTING CONDITION	FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM
At Intersection and Related	Raining	Wet	Daylight	Vehicle - Pedalcyclist	Going Straight Ahead		West
At Intersection and Related	Raining	Wet	Daylight	Entering at angle	Going Straight Ahead	Making Left Turn	North
At Driveway	Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	North
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East
At Driveway	Unknown	Unknown	Other	One parked-one moving	Backing	Legally Parked, Unoccupied	Vehicle Backing
At Intersection and Related	Overcast	Wet	Dusk	Vehicle Strikes Pedalcyclist	Going Straight Ahead		North
At Intersection and Related	Overcast	Wet	Dark-Street Lights On	Entering at angle	Going Straight Ahead	Starting in Traffic Lane	South
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	Vehicle going straight hits pedestrian	Going Straight Ahead		West

VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	BICYCLIST CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)
East			Inattention		None
South	West	North	Did Not Grant RW to Vehicle	None	
South	Vehicle Stopped	Vehicle Stopped	Unknown Driver Distraction	Inattention	
West	East	Vehicle Stopped	Under Influence of Alcohol	None	
Vehicle Backing			Improper Backing	None	
South			Inattention		None
North	West	East	Disregard Stop Sign - Flashing Red	None	
North	Vehicle Stopped	Vehicle Stopped	Inattention	None	
East			Other Contributing Circ Not Listed		

PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 1 (UNIT ?)	FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward)	WA STATE PLANE SOUTH - X 2010 - FORWARD	WA STATE PLANE SOUTH - Y 2010 - FORWARD
Lane of Primary Trafficway	Lane of Primary Trafficway	1209042.11	827468.7
Lane of Primary Trafficway	Lane of Primary Trafficway	1209042.11	827468.7
Lane of Primary Trafficway	Lane of Primary Trafficway	1209043.69	827388.19
Lane of Primary Trafficway	Lane of Primary Trafficway	1209042.11	827468.71
Intersecting Trafficway	Intersecting Trafficway	1208968.92	826204.91
Lane of Primary Trafficway	Lane of Primary Trafficway	1209042.11	827468.71
Lane of Primary Trafficway	Lane of Primary Trafficway	1209042.11	827468.71
Lane of Primary Trafficway	Lane of Primary Trafficway	1209042.11	827468.71
None	None	1209042.11	827468.71

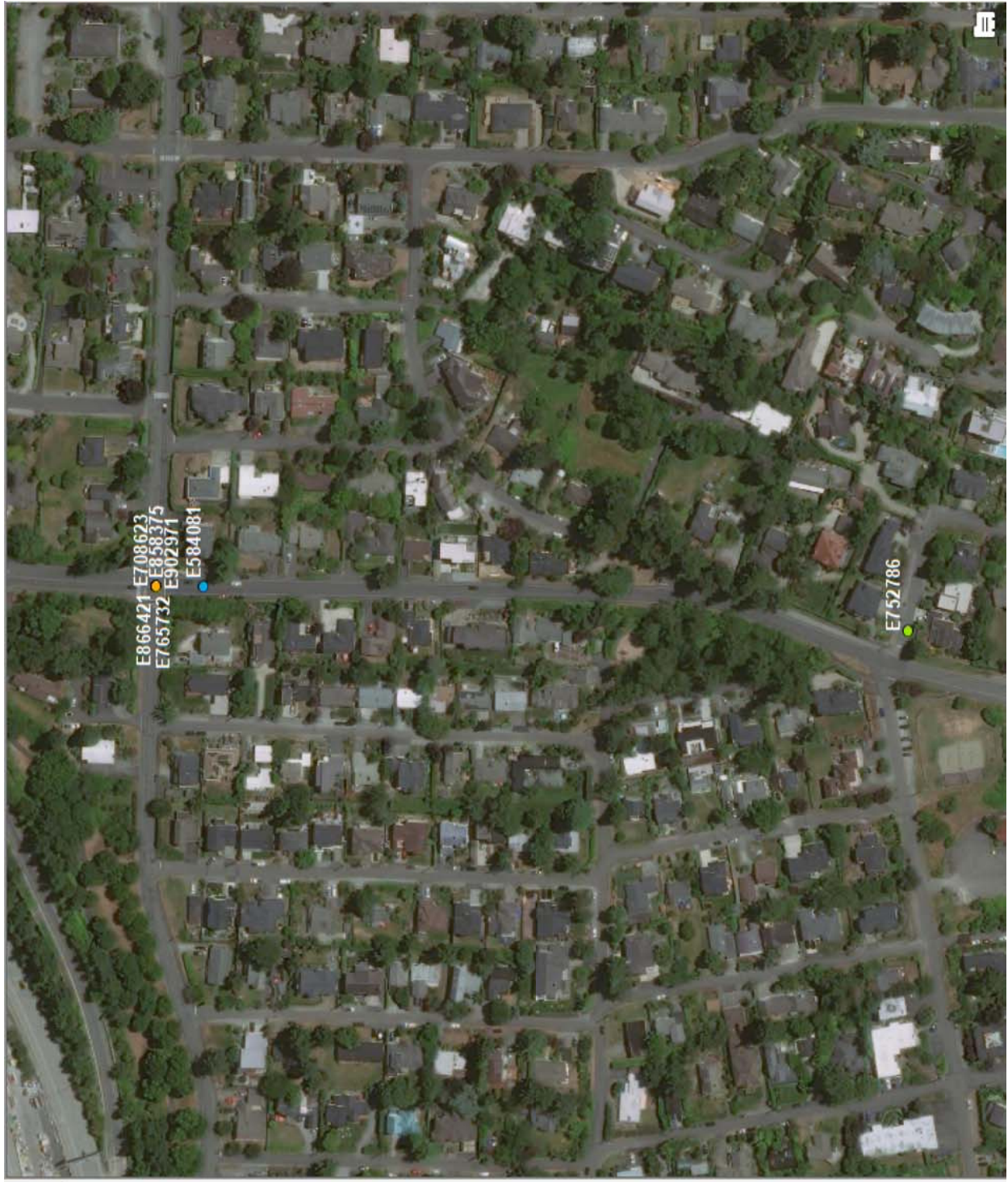


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